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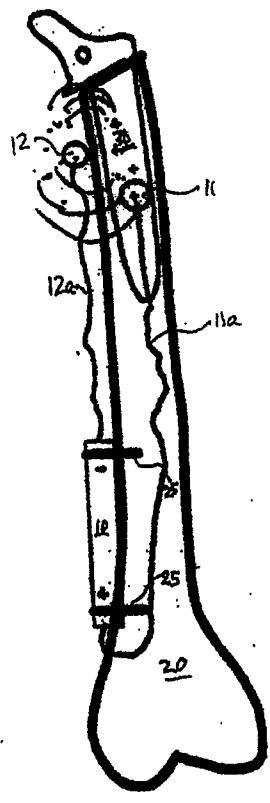
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(54) **Implanted bone stimulator and prosthesis system**

(57) An implanted piezoelectric module generates charge which may be applied to tissue or used to power or recharge an implanted device such as a pump or pacemaker. In a system for enhanced bone healing or anchoring of an implanted bone prosthesis such as a plate, stem, articulation component or other structural component, the piezoelectric element is coupled to receive mechanical strain from body activity and generates a charge which is applied to stimulate bone growth for anchoring the prosthesis. A metal mesh screen may apply the piezo-generated charge over a region of the bone surface to enhance growth of a thickening body at a desired region, for example at a region typically subject to stress shielding. The piezoelectric element may also be positioned in a region of tensile strain, with its cathodic pole extending to the desired growth gap or intended region of bone accretion. Oppositely poled elements may be positioned on opposing sides of a long bone or prosthesis so that the tensile and compressive stresses in opposed region produce charge of like polarity.



**FIGURE 1**

**EP 1 023 872 A3**



European Patent  
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Place of search THE HAGUE		Date of completion of the search 5 June 2002	Examiner Klein, C
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